

IN THE CLAIMS

Please make the following claim substitutions:

1. (Canceled)
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Canceled)
7. (Canceled)
8. (Canceled)
9. (Currently amended) A bridge device for expanding a number of
addressable target devices that can be connected to a communications bus, said
bridge device using a predetermined protocol, said bridge device comprising:
at least one parent bus port for coupling said bridge device to at least one
host bus master over a parent bus, said bus master operable to utilize a layered
communication protocol having said bridge device addressing capabilities and
addressing characteristics of said predetermined protocol included;
at least one child bus port for coupling said bridge device to said target
devices over a child bus, said target devices adapted to communicate using said
predetermined protocol;
wherein a standard format message in said layered communication
protocol includes a CRC field having a value based on other data included in said
message, said bridge device further including a CRC generator and checker.
The device of claim 8, wherein an I²C address for said target device is
represented in said a CRC value is calculated for all incoming or outgoing
packets.
10. (Canceled)
11. (Canceled)
12. (Canceled)

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1 14. (Canceled)
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1 20. (Canceled)
1 21. (Canceled)
1 22. (Canceled)
1 23. (Canceled)
1 24. (Canceled)
1 25. (Canceled)
1 26. (Canceled)
1 27. (Canceled)

28. (Currently amended) A system comprising:
at least one host bus master operable to utilize a first communications
protocol for communicating over a parent bus; and
at least two LIP bridge devices, each LIP bridge device including,
a first transceiver coupled to said host bus master over said parent
bus, said host bus master utilizing said first communications protocol;
a second transceiver coupled to target devices over a child bus,
said target devices utilizing a second communications protocol, said first
communications protocol having a bridge device address field for
addressing said bridge devices and a target device address field for
addressing said target devices coupled to said child bus;
~~The system of Claim 27~~ said including at least two LIP bridge devices
being coupled to said parent bus and said child bus, said host bus master being
operable to use pairs of said at least two LIP bridge devices to determine if
transactions through a particular LIP bridge are corrupted and to verify integrity of
data received from said target devices.

17 29. (New) The system of claim 28, said at least two LIP bridge devices
18 being operable to transmit messages between said host bus master and
19 said target devices, each of said at least two LIP bridge devices being
20 adapted to use partnering signals to reset and disable the other LIP bridge
21 device to isolate faults.

30. (New) The system of claim 29, wherein said host bus master is
operable to hold a failed interconnected LIP bridge in a reset state in
which said failed interconnected LIP bridge is electrically removed from
said child bus.

31. (New) The system of claim 30, wherein said host bus master clears
errors in said failed interconnected LIP bridge with reset commands.

32. (New) The system of claim 31, wherein said host bus master is
operable to access any target device on said child bus via any LIP bridge
device connected to said parent bus and said child bus.

33. (New) The system of claim 32, wherein each at least two LIP bridge
devices further comprise a CRC generator, said host bus master being
operable to determine that messages through a particular LIP bridge
device are corrupt if the same transaction from different LIP bridge
devices result in different CRC values from said CRC generator.